



*Consulting Engineers
and Scientists*

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January 19, 2007
(PBW Project No. 1352)

VIA OVERNIGHT DELIVERY

Mr. M. Gary Miller, Remedial Project Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-AP)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Groundwater Data, Gulfco Marine Maintenance Site, Freeport, Texas

Dear Mr. Miller:

Per our discussions last month, please find enclosed a summary of groundwater data collected as part of the Remedial Investigation/Feasibility Study (RI/FS) at the subject site (the Site). This information is provided by Pastor, Behling & Wheeler, LLC (PBW) on behalf of LDL Coastal Limited LP (LDL), Chromalloy American Corporation (Chromalloy) and The Dow Chemical Company (Dow). In accordance with Paragraph 52 of the modified Unilateral Administrative Order for the Site, I certify that I have been fully authorized by the Respondents to submit these documents and to legally bind all Respondents thereto.

The following documents are transmitted herewith for your review:

- Figure 1 – Zone A Potentiometric Surface – August 4, 2006
- Figure 2 – Zone A Potentiometric Surface – October 5, 2006
- Figure 3 – Groundwater Sample Preliminary Screening Value Exceedences
- Figure 4 – Proposed Monitoring Well Locations
- Table 1 – Groundwater Concentrations Exceeding Preliminary Screening Values (PSVs)
- Table 2 – Proposed Groundwater Sample Analyses

Earlier versions of the above figures were provided to you as oversize plates on November 28, 2006. At that time, we discussed these data on a preliminary basis and reviewed investigation activities to be performed based on the data, consistent with the process outlined in the RI/FS Work Plan. Per your request in a subsequent telephone conversation, this letter has been prepared to provide the scope of those investigation activities. The methods and procedures for these activities will be those previously described in the approved RI/FS Work Plan, the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP).

Current Data Summary

Water level elevations were measured in Site monitoring wells on August 4, 2006 and October 5, 2006. These elevation data were used to construct the potentiometric surface maps for the uppermost water-bearing unit at the Site (hereafter referred to as Zone A) depicted in Figures 1 and 2. Groundwater samples were collected from Site monitoring wells and temporary piezometers in July and August 2006, and analyzed for those parameters specified in the approved RI/FS Work Plan and FSP. Results of these analyses have been previously provided as part of the monthly status reports for the Site.

Section 5.6.5 of the RI/FS Work Plan outlines procedures for evaluating the extent of chemicals of interest (COIs) in Site groundwater. Specifically, the groundwater sample analytical results are compared to the PSVs in Table 18 for the purpose of assessing whether the lateral and vertical extent of COIs has been identified. As indicated in Table 1, PSV exceedences were noted at 14 groundwater sample locations (7 temporary piezometer locations and 7 monitoring well locations). As shown on Figure 3, most PSV exceedences and the highest COI concentrations were associated with sample locations in the near vicinity of the former surface impoundments north of Marlin Avenue. Only three locations south of Marlin Avenue exhibited any PSV exceedences.

Proposed Zone A Wells

Based on these data, and consistent with the nature and extent evaluation procedures specified in the RI/FS Work Plan, the installation, development and sampling of five additional Zone A groundwater monitoring wells (Figure 4), and resampling of two existing Zone A monitoring wells is proposed. The proposed Zone A sample locations and analyses (Table 2) are as follows:

- Monitoring well SF5MW10 will be resampled for gamma-BHC (Lindane). This PSV exceedence is suspected to be a false positive, given the low concentration (reported as an estimated value between the method detection limit (MDL) and sample quantitation limit (SQL)) in the initial sample from this well, the generally low mobility characteristics of Lindane in the environment, its absence in any other nearby samples and the absence of other, more mobile COIs in this sample.
- Monitoring well SJ1MW15 will be resampled for endosulfan sulfate and heptachlor epoxide. These PSV exceedences are also suspected to be false positives due to their low concentrations (the heptachlor epoxide result is an estimated value between the MDL and SQL), the low mobility characteristics of these compounds, their absence in nearby samples and the absence of other more mobile COIs in this sample.
- Monitoring well SA4MW22 will be installed in the approximate vicinity of previous temporary piezometer SA4PZ07. SA4MW22 will be developed and sampled for endosulfan II and nickel. The purpose of this well will be to evaluate the PSV exceedences of these COIs in SA4PZ07 and thus assess the southwestern extent of these COIs in Zone A.
- Monitoring well NB4MW18 will be installed in the approximate vicinity of previous temporary piezometer NB4PZ01. NB4MW18 will be developed and sampled for endosulfan II and nickel. The purpose of this well will be to evaluate the PSV

exceedences of these COIs in NB4PZ01 and thus assess the southwestern extent of these COIs in Zone A.

- Monitoring well NG3MW19 will be installed northeast of monitoring well NE3MW05 and east of temporary piezometer NF3PZ06. NG3MW19 will be developed and sampled for ethylbenzene, anthracene, naphthalene, phenanthrene, and pyrene (PSV exceedences reported in NE3MW05), and nickel (PSV exceedence reported in NF3PZ06). The purpose of this well will be to evaluate the northeastern extent of these COIs.
- Monitoring wells OMW20 and OMW21 will be installed in off-site areas northwest of the Site. These wells will be developed and sampled for the compounds listed in Table 2. The purpose of these wells will be to evaluate the northwestern extent of COIs detected in ND2MW01, ND1PZ03, NE1MW04, and NF1PZ05, and provide additional groundwater sample locations in the generally downgradient direction from the former surface impoundments.

Proposed Zone B Wells

In addition to evaluating the lateral extent of COIs in the uppermost water-bearing zone, the RI/FS Work Plan also provides that, should the concentration of any COI at a groundwater sample location exceed a PSV, then a minimum of three additional groundwater samples will be collected from the next underlying water-bearing unit. In order to address this provision in light of the Zone A data, the installation, development and sampling of five monitoring wells within the next underlying water-bearing zone (hereafter referred to as Zone B) is proposed at the locations shown on Figure 4. As indicated in Table 2, samples from these Zone B wells will be analyzed for all COIs exceeding their respective PSV in at least one Zone A groundwater sample.

The borings for the proposed Zone B wells will be advanced as necessary to identify the top and base of this water-bearing zone (anticipated total boring depths of approximately 50 feet below grade). The specific designs for these wells will be determined in the field based on the observed lithology with the goal of screening the wells at the base of Zone B. In order to minimize the potential for downward migration of COIs from Zone A to Zone B as a result of well installation activities, the proposed wells have been located outside of the area near the former surface impoundments where elevated COI concentrations were observed in Zone A groundwater samples. Should field indications of elevated COI concentrations, such as visual indications of chemical staining or non-aqueous phase liquids (NAPLs) within the soil core, elevated organic vapor meter soil headspace measurements, or related conditions, be observed within the Zone A interval at a proposed Zone B well location, the proposed well will be relocated outside of the area where such conditions are encountered. As a further protective measure, a surface or isolation casing will be installed to the confining clay below Zone A and grouted in place at these locations prior to deeper boring advancement and well construction. Alternatively, a similarly protective well installation method (e.g., casing hammer or sonic drilling techniques) will be employed.

In the event that no PSV exceedences are noted in any of the proposed Zone B wells, an additional Zone B monitoring well will be installed closer to the former surface impoundments, where possible, to further evaluate the absence of PSV exceedences in this zone. In no case, however, will a boring be advanced through an underlying low-permeability confining unit where field indications of elevated COI concentrations (as described above) are noted in the overlying zone.

Thank you for the opportunity to submit this information. We look forward to your approval of these proposed activities, so we can continue to move forward with the expeditious completion of the RI/FS.

Sincerely,

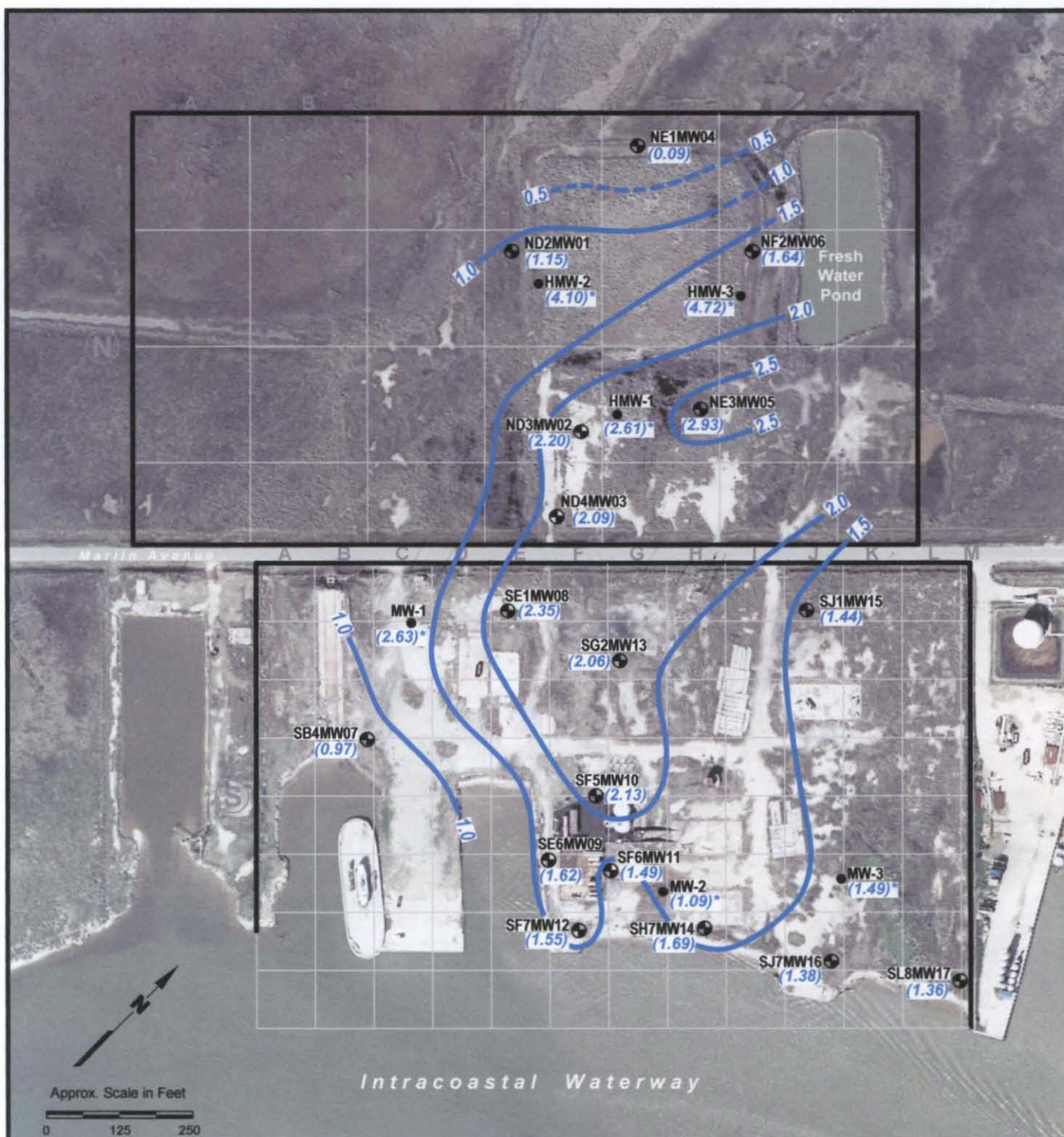
PASTOR, BEHLING & WHEELER, LLC

A handwritten signature in black ink, appearing to read 'Eric F. Pastor', with a long horizontal flourish extending to the right.

Eric F. Pastor, P.E.
Principal Engineer

cc: Ms. Luda Voskov - Texas Commission on Environmental Quality
Mr. Luis Vega - EA Engineering, Science and Technology
Mr. Brent Murray
Mr. Rob Rouse - The Dow Chemical Company
Mr. Donnie Belote - The Dow Chemical Company
Mr. Allen Daniels - LDL Coastal Limited, LP
Mr. F. William Mahley - Strasburger & Price, LLP
Mr. James C. Morris III - Thompson & Knight, LLP
Ms. Elizabeth Webb - Thompson & Knight, LLP

FIGURES



EXPLANATION

- | | |
|---|--|
| — Gulfco Marine Maintenance Site Boundary (approximate) | (2.35) Water-Level Elevation (Ft AMSL) Measured 8/4/06 |
| ● Monitoring Well Location | * Not Used to Contour |
| ● Previous Monitoring Well Location | —2.0— Approximate Contour in Shallow Potentiometric Surface (Ft AMSL)
Contour Interval = 0.5 Ft |

Source of photo: H-GAC, Texas aerial photograph, 2004.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 1

ZONE A POTENTIOMETRIC SURFACE AUGUST 4, 2006

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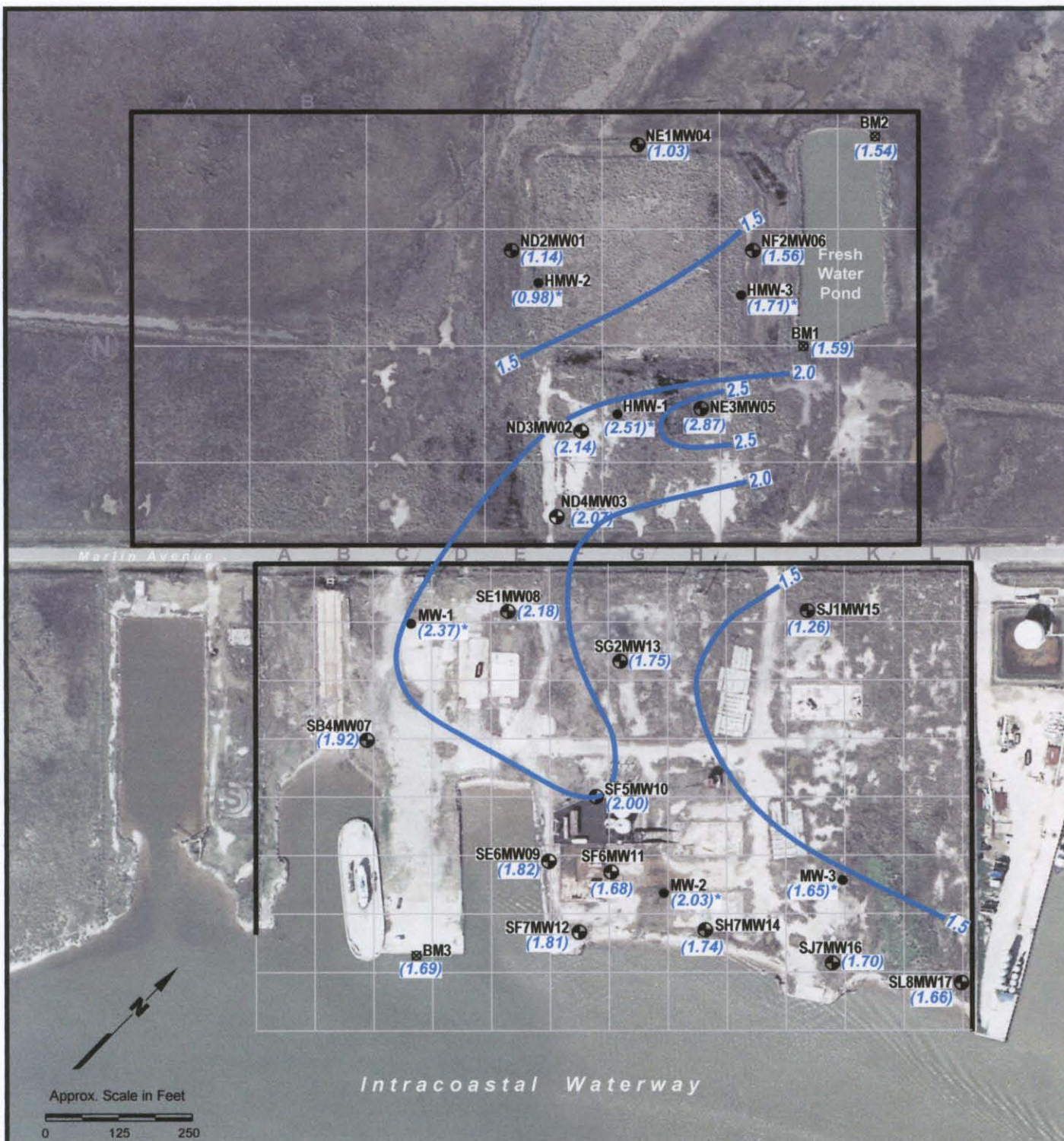
BY: ZGK

REVISIONS

DATE: JAN., 2007

CHECKED: EFP

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EXPLANATION

- | | | |
|---|---------|---|
| — Gulfco Marine Maintenance Site Boundary (approximate) | (1.81) | Water-Level Elevation (Ft AMSL) Measured 10/5/06 |
| ⊕ Monitoring Well Location | * | Not Used to Contour |
| ● Previous Monitoring Well Location | — 2.0 — | Approximate Contour in Shallow Potentiometric Surface (Ft AMSL) |
| ⊗ Surface Water Measurement Point | | Contour Interval = 0.5 Ft |

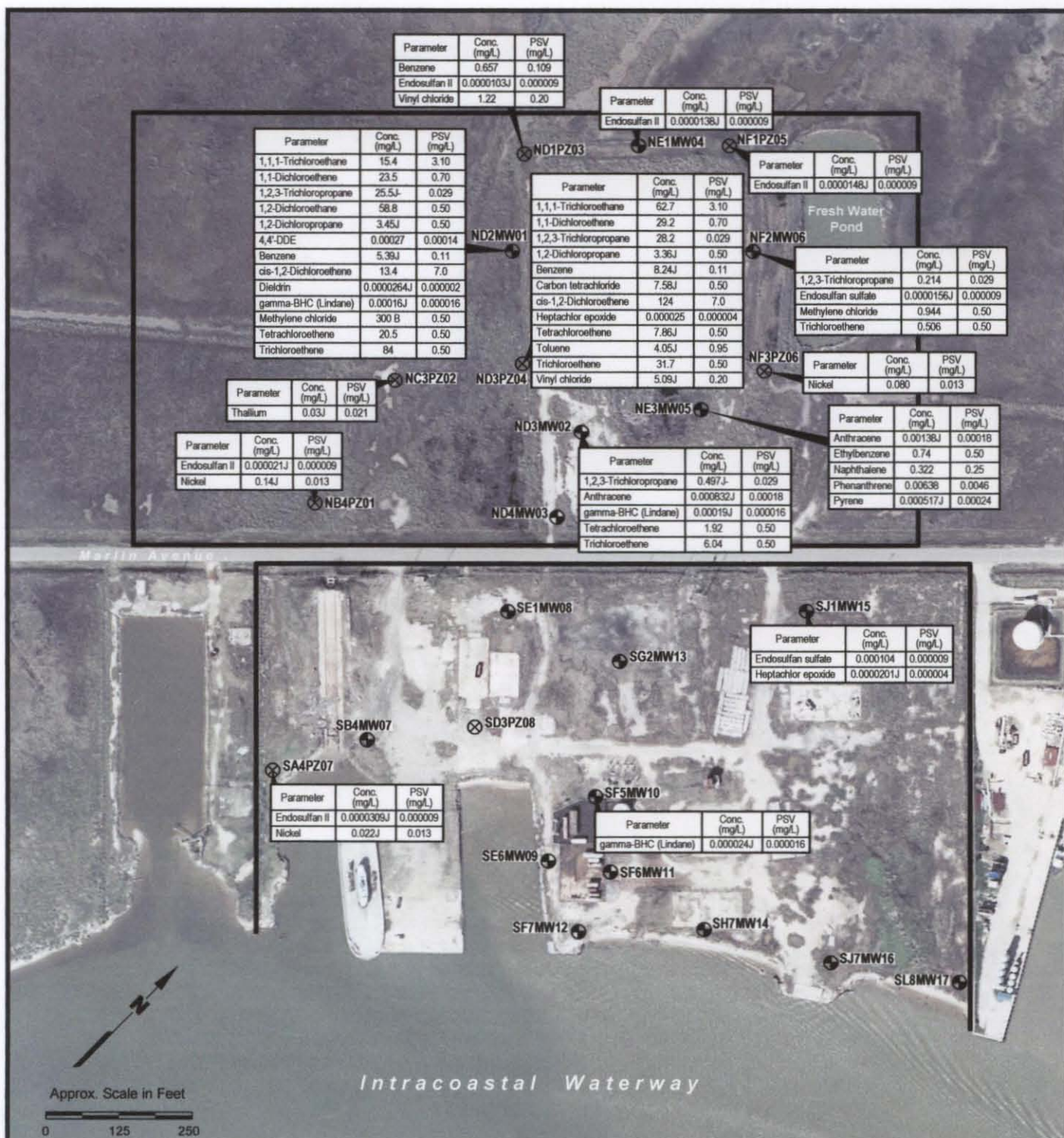
Source of photo: H-GAC, Texas aerial photograph, 2004.

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Figure 2 ZONE A POTENTIOMETRIC SURFACE OCTOBER 5, 2006

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EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- ⊕ Monitoring Well Location
- ⊗ Temporary Piezometer

Notes:

1. All samples collected July-August 2006.
2. PSV = Preliminary Screening Value.
3. Data Qualifiers: J = Estimated Value.
J- = Estimated Value - biased low.
B = Analyte detected in Method Blank.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 3

GROUNDWATER SAMPLE PRELIMINARY SCREENING VALUE EXCEEDENCES

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BY: ZGK

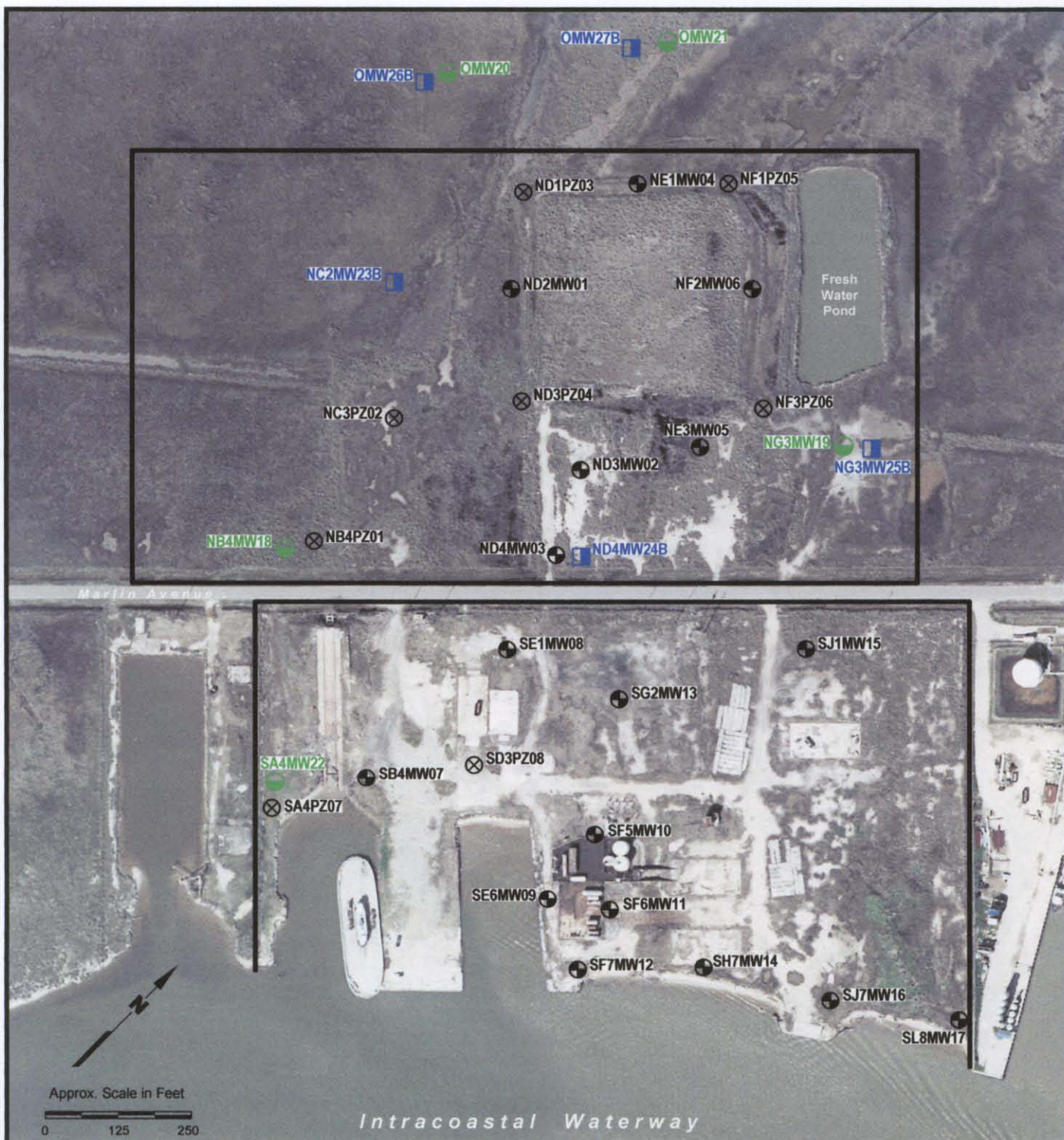
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Source of photo: H-GAC, Texas aerial photograph, 2004.



EXPLANATION

- | | |
|---|-------------------------------------|
| — Gulfco Marine Maintenance Site Boundary (approximate) | ● Proposed Monitoring Well - Zone A |
| ● Monitoring Well Location - Zone A | ■ Proposed Monitoring Well - Zone B |
| ⊗ Temporary Piezometer - Zone A | |

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 4 PROPOSED MONITORING WELL LOCATIONS

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Source of photo: H-GAC, Texas aerial photograph, 2004.

TABLES

Table 1 -
Groundwater Concentrations Exceeding Preliminary Screening Values

Sample ID	Collection Date	Parameter	Result (mg/L)	Lab Qualifier	Validator Qualifier	Table 18 PSV (mg/L) ⁽¹⁾
ND3PZ04-004	31-Jul-06	1,1,1-Trichloroethane	62.7		none	3.10E+00
ND3PZ04-004	31-Jul-06	1,1-Dichloroethene	29.2		none	7.00E-01
ND3PZ04-004	31-Jul-06	1,2,3-Trichloropropane	28.2		none	2.92E-02
ND3PZ04-004	31-Jul-06	1,2-Dichloropropane	3.36	J	J	5.00E-01
ND3PZ04-004	31-Jul-06	Benzene	8.24	J	J	1.09E-01
ND3PZ04-004	31-Jul-06	Carbon tetrachloride	7.58	J	J	5.00E-01
ND3PZ04-004	31-Jul-06	cis-1,2-Dichloroethene	124		none	7.00E+00
ND3PZ04-004	31-Jul-06	Heptachlor epoxide	0.000025		none	3.60E-06
ND3PZ04-004	31-Jul-06	Tetrachloroethene	7.86	J	J	5.00E-01
ND3PZ04-004	31-Jul-06	Toluene	4.05	J	J	9.50E-01
ND3PZ04-004	31-Jul-06	Trichloroethene	31.7		none	5.00E-01
ND3PZ04-004	31-Jul-06	Vinyl chloride	5.09	J	J	2.00E-01
NE1MW04-004	03-Aug-06	Endosulfan II	1.38E-05	J	J	9.00E-06
NE3MW05-005	02-Aug-06	Anthracene	0.00138	J	J	1.80E-04
NE3MW05-005	02-Aug-06	Ethylbenzene	0.74		none	5.00E-01
NE3MW05-005	02-Aug-06	Naphthalene	0.322		none	2.50E-01
NE3MW05-005	02-Aug-06	Phenanthrene	0.00638		none	4.60E-03
NE3MW05-005	02-Aug-06	Pyrene	0.000517	J	J	2.40E-04
NF1PZ05-005	03-Aug-06	Endosulfan II	1.48E-05	J	J	9.00E-06
NF2MW06-006	03-Aug-06	1,2,3-Trichloropropane	0.214		none	2.92E-02
NF2MW06-006	03-Aug-06	Endosulfan sulfate	1.56E-05	J	J	9.00E-06
NF2MW06-006	03-Aug-06	Methylene chloride	0.944		none	5.00E-01
NF2MW06-006	03-Aug-06	Trichloroethene	0.506		none	5.00E-01
NF3PZ06-006	01-Aug-06	Nickel	0.084		none	1.31E-02
SA4PZ07-007	02-Aug-06	Endosulfan II	3.09E-05	J	J	9.00E-06
SA4PZ07-007	03-Aug-06	Nickel	0.022	B	J	1.31E-02
SF5MW10-010	01-Aug-06	gamma-BHC (Lindane)	0.000024	J	J	1.60E-05
SJ1MW15-015	02-Aug-06	Endosulfan sulfate	0.000104		none	9.00E-06
SJ1MW15-015	02-Aug-06	Heptachlor epoxide	2.01E-05	J	J	3.60E-06

Notes:

1. Preliminary Screening Value from Table 18 of RI/FS Work Plan.

Table 2 -
Proposed Groundwater Sample Analyses

Well ID	Analytical Parameter
SF5MW10	gamma-BHC (Lindane)
SJ1MW15	Endosulfan sulfate Heptachlor epoxide
SA4MW22	Endosulfan II Nickel
NB4MW18	Endosulfan II Nickel
NG3MW19	Ethylbenzene Anthracene Naphthalene Phenanthrene Pyrene Nickel
OMW20 OMW21	1,1,1-Trichloroethane 1,1-Dichloroethene 1,2,3-Trichloropropane 1,2-Dichloroethane 1,2-Dichloropropane Benzene cis-1,2-Dichloroethene Methylene chloride Tetrachloroethene Trichloroethene Vinyl chloride 4,4'-DDE Dieldrin Endosulfan II gamma-BHC (Lindane)

Table 2 -
Proposed Groundwater Sample Analyses

Well ID	Analytical Parameter
NC2MW23B	1,1,1-Trichloroethane
ND4MW24B	1,1-Dichloroethene
NG3MW25B	1,2,3-Trichloropropane
OMW26B	1,2-Dichloroethane
OMW27B	1,2-Dichloropropane
	Benzene
	Carbon tetrachloride
	cis-1,2-Dichloroethene
	Ethylbenzene
	Methylene chloride
	Tetrachloroethene
	Toluene
	Trichloroethene
	Vinyl chloride
	Anthracene
	Naphthalene
	Phenanthrene
	Pyrene
	4,4'-DDE
	Dieldrin
	Endosulfan II
	Endosulfan sulfate
	gamma-BHC (Lindane)
	Heptachlor epoxide
	Nickel
	Thallium